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NOTICE OF ALLOWANCE AND FEE(S) DUE

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7590

12/04/2008

STRAUB & POKOTYLO 788 Shrewsbury Avenue TINTON FALLS, NJ 07724 EXAMINER

DUONG, THOMAS

ART UNIT PAPER NUMBER

2445 DATE MAILED: 12/04/2008

APPLICATION NO.	APPLICATION NO. FILING DATE FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,324	12/01/2000	Robert P. Enns	JUNIPER-10 (JNP-0044)	3838

TITLE OF INVENTION: COMPARING CONFIGURATION INFORMATION FOR A DATA FORWARDING DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	03/04/2009

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APPLICATION NO.	FILING DATE		FIRST NAMED INVENT	OR		ATTO	RNEY DOCKET NO.	CONFIRMATION NO.
09/734,324 TITLE OF INVENTION	12/01/2000 N: COMPARING CONFI	GURATION INFORMA	Robert P. Enns TION FOR A DATA F	ORV	WARDING DEVI		PER-10 (JNP-0044)	3838
APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DU	Œ	PREV. PAID ISSUE	E FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0		\$0		\$1510	03/04/2009
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DUONG,	THOMAS	2445	709-238000					
"Fee Address" ind PTO/SB/47; Rev 03-(Number is required. 3. ASSIGNEE NAME A PLEASE NOTE: Un recordation as set fort	AND RESIDENCE DATA less an assignee is ident th in 37 CFR 3.11. Com	" Indication form aed. Use of a Customer A TO BE PRINTED ON T	data will appear on the T a substitute for filing	ngle or ag attor be p type e pa	firm (having as a gent) and the name on agents. If printed.	membes of uno name	er a 2p to se is 3dentified below, the do	cument has been filed for
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26479	26479 7590 12/04/2008				EXAMINER		
STRAUB & PO	KOTYLC	DUONG,	ГНОМАЅ				
788 Shrewsbury Avenue				ART UNIT	PAPER NUMBER		
TINTON FALLS	TINTON FALLS, NJ 07724			2445			
		DATE MAILED: 12/04/2008					

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1005 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1005 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

	Application No.	Applicant(s)			
	09/734,324	ENNS, ROBERT P.			
Notice of Allowability	Examiner	Art Unit			
	THOMAS DUONG	2445			
	THOWAS DOONS	2445			
The MAILING DATE of this communication appeal all claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT R of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED or other appropriate comm IGHTS. This application is	in this application. If not included nunication will be mailed in due course. THIS			
1. This communication is responsive to <u>September 9, 2008</u> .					
2. X The allowed claim(s) is/are 2-4, 6-11, 13-20, 22-24, and 23	<u>7-33</u> .				
 3. Acknowledgment is made of a claim for foreign priority una) All b) Some* c) None of the: 1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority do 	e been received. e been received in Applicat	ion No			
International Bureau (PCT Rule 17.2(a)).	cuments have been receive	ed in this national stage application from the			
* Certified copies not received:					
Applicant has THREE MONTHS FROM THE "MAILING DATE" noted below. Failure to timely comply will result in ABANDONN THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.		le a reply complying with the requirements			
4. A SUBSTITUTE OATH OR DECLARATION must be subm INFORMAL PATENT APPLICATION (PTO-152) which give					
5. CORRECTED DRAWINGS (as "replacement sheets") mus	st be submitted.				
(a) including changes required by the Notice of Draftspers	son's Patent Drawing Revie	ew (PTO-948) attached			
1) 🔲 hereto or 2) 🔲 to Paper No./Mail Date					
(b) ☐ including changes required by the attached Examiner'Paper No./Mail Date	s Amendment / Comment o	or in the Office action of			
Identifying indicia such as the application number (see 37 CFR 1 each sheet. Replacement sheet(s) should be labeled as such in t					
6. DEPOSIT OF and/or INFORMATION about the depo attached Examiner's comment regarding REQUIREMENT					
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 Notice of References Cited (PTO-892) Notice of Draftperson's Patent Drawing Review (PTO-948) 		nformal Patent Application Summary (PTO-413),			
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3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date	7. ⊠ Examiner'	s Amendment/Comment			
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material 8. ☑ Examiner's Statement of Reasons for Allowance					
	9.	<u> </u>			
/Patrice Winder/					
Primary Examiner, Art Unit 2445					

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DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37

CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no

later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with

John C. Pokotylo (Reg. No. 36,242) on November 21, 2008.

3. The application has been amended as follows:

Claim 1 (canceled)

Claim 2 (currently amended): The processor-executable method of claim 4 wherein the

selected set of configuration information for a data forwarding device is a most recently

committed set of configuration information for the data forwarding device.

Claim 3 (currently amended): The processor-executable method of claim 4 wherein the

selected set of configuration information for a data forwarding device is selected by a

user.

Claim 4 (currently amended): A <u>processor-executable</u> method comprising:

a) accepting at least a part of a selected set of configuration information for a data forwarding device;

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- b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
- c) determining, using at least one processor, differences, if any, between
- the at least a part of the set of candidate configuration information for the data forwarding device, and
- the at least a part of the selected set of configuration information for the data forwarding device,

wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements,

wherein a first statement of the plurality of statements of the set of candidate configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,

wherein the selected set of configuration information for the data forwarding device includes a plurality of statements,

wherein a first statement of the plurality of statements of the selected set of configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,

wherein the at least the part of the set of candidate configuration information only includes a defined first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration, and

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wherein the at least the part of the selected set of configuration information includes a corresponding first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration.

Claim 5 (canceled)

Claim 6 (currently amended): The <u>processor-executable</u> method of claim 4 wherein the defined first statement is defined based on a statement of the hierarchical candidate configuration information on which a user is presently working.

Claim 7 (currently amended): The <u>processor-executable</u> method of claim 4 wherein the defined first statement is defined by a user input.

Claim 8 (currently amended): The <u>processor-executable</u> method of claim 4 wherein the hierarchical configuration information includes at least two categories at a first hierarchical level, and

wherein the at least two categories are selected from a group of data forwarding device configuration categories consisting of:

- A) chassis configuration information;
- B) class of service configuration information;
- C) firewall configuration information;
- D) forwarding options configuration information;
- E) groups configuration information;

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F) interfaces configuration information;

- G) policy options configuration information;
- H) protocols configuration information;
- I) routing instances configuration information;
- J) routing options configuration information;
- K) network management protocol configuration information; and
- L) system configuration information.

Claim 9 (currently amended): The <u>processor-executable</u> method of claim 4 wherein the hierarchical configuration information includes at least two categories at a given hierarchical level, the method further comprising:

- d) associating a predetermined permission value with a user that is logged in; and
- e) determining, using the at least one processor, whether the logged in user is permitted to access one of the at least two categories of configuration information based on the predetermined permission.

Claim 10 (previously presented): A method comprising:

- a) accepting at least a part of a selected set of configuration information for a data forwarding device;
- b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
- c) determining differences, if any, between
- the at least a part of the set of candidate configuration information for the data forwarding device, and

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- the at least a part of the selected set of configuration information for the data forwarding device,

wherein the act of accepting at least a part of a selected set of configuration information for a data forwarding device is performed by accessing a storage device of the data forwarding device,

wherein the act of accepting at least a part of a set of candidate configuration information for the data forwarding device is performed by accessing a storage device of the data forwarding device; and

wherein the act of determining differences, if any, between

- the at least the part of the set of candidate configuration information for the data forwarding device, and
- the at least the part of the selected set of configuration information for the data forwarding device,

is performed by a component of the data forwarding device.

Claim 11 (currently amended): A processor-executable method comprising:

- a) accepting at least a part of a selected set of configuration information for a data forwarding device;
- b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
- c) determining, using at least one processor, differences, if any, between
- the at least a part of the set of candidate configuration information for the data forwarding device, and

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- the at least a part of the selected set of configuration information for the data forwarding device,

wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements,

wherein the selected set of configuration information for the data forwarding device includes a plurality of statements, and

wherein the act of determining differences, if any, between

- the at least a part of the set of candidate configuration information for the data forwarding device, and
- the at least a part of the selected set of configuration information for the data forwarding device,

considers changes to statements without regard to parameter values.

Claim 12 (canceled)

Claim 13 (currently amended): In a data forwarding device, a facility for checking at least a part of a set of candidate configuration information, the facility comprising:

- a) a storage device for storing at least one set of configuration information for the data forwarding device;
- b) an input facility for
- i) accepting at least a part of a selected one of the at least one set of configuration information for a data forwarding device accessed from the storage device of the data forwarding device, and

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ii) accepting at least a part of a set of candidate configuration information for the data forwarding device accessed from the storage device of the data forwarding device; and

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- c) a configuration comparison facility for determining differences, if any, between
- the at least a part of the set of candidate configuration information for the data forwarding device, and
- the at least a part of the selected one of the at least one set of configuration information for the data forwarding device.

Claim 14 (currently amended): A method for determining differences in at least a part of sets of configuration information, comprising:

- a) accepting at least a part of a first set of configuration information for a data forwarding device, wherein the first set of configuration information has not been saved on the data forwarding device as a committed configuration, and wherein no copied instance of the first set of configuration information has been saved on the data forwarding device as a committed configuration;
- b) accepting at least a part of a second set of configuration information for the data forwarding device, wherein the second set of configuration information has been saved on the data forwarding device; and
- c) determining, using at least one processor, differences, if any, between
- the first set of configuration information for a data forwarding device, and
- the second set of configuration information for a data forwarding device; and
- d) displaying, using a display device, the determined differences, wherein the determined differences are indicated by at least one of special characters preceding changed lines of configuration information, special symbols preceding changed lines of

configuration information, special font characteristics applied to changed versus unchanged lines of the configuration information, and special font characteristics applied to changed versus unchanged sections of the configuration information.

Claim 15 (previously presented): The method of claim 14 wherein the first set of configuration information for a data forwarding device includes a plurality of statements,

wherein a first statement of the plurality of statements of the first set of configuration information for a data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,

wherein the second set of configuration information for a data forwarding device includes a plurality of statements, and

wherein a first statement of the plurality of statements of the second set of configuration information for a data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration.

Claim 16 (previously presented): The method of claim 15 wherein the at least the part of the first set of configuration information for a data forwarding device only includes a defined first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration, and

wherein the at least the part of the second set of configuration information for a data forwarding device includes a corresponding first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration.

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Claim 17 (original): The method of claim 16 wherein the defined first statement is defined by a user input.

Claim 18 (original): The method of claim 15 wherein the hierarchical configuration information includes at least two categories at a first hierarchical level, and

wherein the at least two categories are selected from a group of data forwarding device configuration categories consisting of:

- A) chassis configuration information;
- B) class of service configuration information;
- C) firewall configuration information;
- D) forwarding options configuration information;
- E) groups configuration information;
- F) interfaces configuration information;
- G) policy options configuration information;
- H) protocols configuration information;
- I) routing instances configuration information;
- J) routing options configuration information;
- K) network management protocol configuration information; and
- L) system configuration information.

Claim 19 (previously presented): The method of claim 14 wherein the act of accepting at least a part of the first set of configuration information for the data forwarding device is performed by accessing a storage device of the data forwarding device,

wherein the act of accepting at least a part of the second set of configuration information for the data forwarding device is performed by accessing a storage device of the data forwarding device, and

wherein the act of determining differences, if any, between

- the first set of configuration information for the data forwarding device, and
- the second set of configuration information for the data forwarding device, is performed by a component of the data forwarding device.

Claim 20 (previously presented): The method of claim 14 wherein the first set of configuration information for a data forwarding device includes a plurality of statements, at least some of which define parameter values,

wherein the second set of configuration information for the data forwarding device includes a plurality of statements, at least some of which define parameter values, and

wherein the act of determining differences, if any, between

- the first set of configuration information for the data forwarding device, and
- the second set of configuration information for the data forwarding device, considers a selected one of (a) statements only, (b) parameter values only, and (c) statements and parameter values.

Claim 21 (canceled)

Claim 22 (currently amended): In a data forwarding device, a facility for comparing at least a part of sets of configuration information, the facility comprising:

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a) a storage device for storing at least two sets of configuration information for the data

forwarding device;

b) an input facility for

i) accepting at least a part of a first selected one of the at least two sets of configuration

information for the data forwarding device accessed from the storage device of the data

forwarding device, and

ii) accepting at least a part of a second selected one of the at least two sets of

configuration information for the data forwarding device accessed from the storage

device of the data forwarding device; and

c) a configuration comparison facility for determining differences, if any, between

- the first selected one of the at least two sets of configuration information for the data

forwarding device, and

- the second selected one of the at least two sets of configuration information for the

data forwarding device.

Claim 23 (currently amended): A method comprising:

receiving with a data forwarding device, a first set of configuration information for

the data forwarding device, wherein the first set of configuration information has not yet

been committed on the data forwarding device, and wherein no copied instance of the

first set of configuration information has been saved on the data forwarding device as a

committed configuration;

receiving with the data forwarding device, a second set of configuration

information for the data forwarding device;

determining with the data forwarding device, differences between the first and second sets of configuration information; and

displaying, using a display device, the determined differences, wherein the determined differences are indicated by at least one of special characters preceding changed lines of configuration information, special symbols preceding changed lines of configuration information, special font characteristics applied to changed versus unchanged lines of the configuration information, and special font characteristics applied to changed versus unchanged sections of the configuration information.

Claim 24 (original): The method according to claim 23, wherein the data forwarding device is a router.

Claims 25 and 26 (canceled)

Claim 27 (previously presented): The method of claim 10 wherein the selected set of configuration information for a data forwarding device is a most recently committed set of configuration information for the data forwarding device.

Claim 28 (previously presented): The method of claim 10 wherein the selected set of configuration information for a data forwarding device is selected by a user.

Claim 29 (currently amended): The <u>processor-executable</u> method of claim 11 wherein the selected set of configuration information for a data forwarding device is a most recently committed set of configuration information for the data forwarding device.

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Claim 30 (currently amended): The processor-executable method of claim 11 wherein

the selected set of configuration information for a data forwarding device is selected by a

user.

Claim 31 (previously presented): The method of claim 14 wherein a command to save

the first set of configuration information on the data forwarding device as a committed

configuration has not occurred.

Claim 32 (previously presented): The method of claim 14 wherein the first set of

configuration information is from an uncommitted candidate configuration, and

wherein the second set of configuration information is from a configuration that

has been saved on the data forwarding device as a committed configuration.

Claim 33 (previously presented): The method of claim 10 wherein the candidate set of

configuration information is an uncommitted candidate configuration, and

wherein the selected set of configuration information is a configuration that has

been saved on the data forwarding device as a committed configuration.

Response to Arguments

4. The Applicant's arguments and amendments filed on September 8, 2008 have been fully

considered and are persuasive.

Allowable Subject Matter

- 5. Claims 2-4, 6-11, 13-20, 22-24, and 27-33 are allowed. The claims indicated include limitations that the prior arts of record do not appear to teach or render obvious, hence they are allowed.
- 6. The following is an examiner's statement of reasons for allowance: As presented in the previous Office Action, Zavalkovsky et al. (US006959332B1) discloses, "In block 316, the current configuration of each device is received and analyzed. Current device configuration information may be obtained using a special CLI command (e.g., "show running config" on a Cisco router), or by other conventional means, such as device discovery processes that use one or more SNMP query messages to obtain MIB variable values. In block 318, based on the current device configuration information received from the device, the process determines one or more specific CLI commands that would create such configuration if sent to and executed by the operating system of the device. As a result, a list of CLI commands for the current device configuration is created and stored" (Zavalkovsky, col.7, lines 56-67). Hence, Zavalkovsky teaches of receiving (i.e., Applicant's accepting) the current configuration (i.e., Applicant's at least a part of a selected set of configuration information) of each device (e.g., Cisco router) (i.e., Applicant's data forwarding device). Zavalkovsky discloses, "As a result, an initial set of basic commands, implementing all abstract policies defined by the user, is created and stored, as shown by block 314. Block 314 also preferably involves assigning a state value of each basic command object in the set, when each basic command object is created. Basic commands in the final list that are created from the abstract policies that were received in the Abstract Policy Translation phase 302 are assigned the state value "DO."" (Zavalkovsky, col.7, lines 45-

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53). Hence, Zavalkovsky teaches of creating and stored (i.e., Applicant's accepting) the initial set of basic commands (i.e., Applicant's at least a part of a set of candidate configuration information) implementing all abstract policies defined by the user for the type of the network device (e.g., Cisco router) (i.e., Applicant's data forwarding device). Zavalkovsky discloses, "Specifically, as shown by block 324, in the Merging and Aggregation phase 306, the two sets of basic commands that were created in the previous phases are compared to determine a minimal set of basic commands that will result in a new device configuration that both retains features of the current device configuration, and implements the abstract policy that was received in the Abstract Policy Translation phase 302. The initial list of basic commands and the list of uploaded basic commands are evaluated and merged, resulting in creating and storing a final list of basic commands, as shown by block 326. During the process of merging and evaluation in block 324, the basic commands from the two sets are compared and their states are changed according to the following rule" (Zavalkovsky, col.8, lines 22-35). Hence, Zavalkovsky teaches of comparing (i.e., Applicant's determining differences) to determine a minimal set of basic commands between the two sets of basic commands (e.g., the current configuration and the initial set of basic commands) (i.e., Applicant's at least a part of a selected set of configuration information and at least a part of a set of candidate configuration information). Also presented in the previous Office Action, Harvey et al. (US007054924B1) discloses,

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"As a specific example of information that may be provided using the foregoing processes and mechanisms, Table 13 presents an example of an IOS network device configuration template, and Table 14 presents an example of the resulting XML format configuration information, including substitution of parameters" (Harvey, col.20, lines 61-

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66; table 13). Hence, Harvey teaches of the configuration (i.e., Applicant's set of candidate configuration information) of a router (i.e., Applicant's data forwarding device) including a plurality of statements..

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However, the prior arts of record fail to teach or suggest individually or in combination as stated in the independent claims for "wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements, wherein a first statement of the plurality of statements of the set of candidate configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration, wherein the selected set of configuration information for the data forwarding device includes a plurality of statements, wherein a first statement of the plurality of statements of the selected set of configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration, wherein the at least the part of the set of candidate configuration information only includes a defined first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration, and wherein the at least the part of the selected set of configuration information includes a corresponding first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration", "is performed by a component of the data forwarding device", and in combination with other limitations as set forth in the independent claims, as well as Applicants' arguments presented on pages 19-27 of the After Non-Final Amendment filed on September 8, 2008. In the fore mentioned amendment, the Applicants argued, "This remote, centralized configuration management does not teach, nor does it suggest, comparisons by a data forwarding device of configurations, for the

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data forwarding device, stored on the data forwarding device. Further, the purported fact

that a computer can be modified to have routing capabilities would not have suggested

to one skilled in the art to use the verification of the Malik patent locally, on a computer-

based data forwarding device." (pg.26).

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany

the issue fee. Such submissions should be clearly labeled "Comments on Statement of

Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Thomas Duong whose telephone number is 571/272-3911. The

examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the

examiner by telephone are unsuccessful, the examiner's supervisor, Jason D. Cardone

can be reached on 571/272-3933. The fax phone numbers for the organization where

this application or proceeding is assigned are 571/273-8300 for regular communications

and 571/273-8300 for After Final communications.

/Thomas Duong/

2 aong,

Patent Examiner, Art Unit 2445

December 4, 2008

/Patrice Winder/

Primary Examiner, Art Unit 2445